

Remarks

Claims 25-28, 30-31, 32-35, 37-38, 39-40, and 42-43 were rejected under 35 USC §103(a) as being unpatentable over Fei (2004/0067741) in view of Jones (6,876,675) and in further view of Parish (5,930,243).

The Applicants' specification provides for a method and apparatus for frequency offset compensation within a communication system. In order to assist in frequency offset compensation, the Applicants transmit a frequency synchronization burst. As stated in paragraphs 57 and 58 of the published patent application, bits within the synchronization burst are used to represent the frequency offset of the burst. For example, as stated in paragraph 57, in an 8-bit header, "seven bits may represent . . . time and frequency position information".

All claims have been amended to include this limitation. In particular, all claims have been amended to include the limitation that synchronization bursts contain bits representing frequency position information for the burst. Analysis of the prior art reveals that the prior art fails to teach or otherwise suggest this limitation.

The Examiner states that in col. 5, lines 19-21, Jones discloses that each frequency synchronization burst contains information regarding its particular frequency offset. Here, Jones states that a "supplemental cyclic prefix" can be used "to acquire burst and timing frequency offset." The Applicants contend that a "supplemental cyclic prefix" is not bits representing frequency position information. Particularly, in col. 5, lines 58-64, Jones reveals that his supplemental cyclic prefix contains a duplicate of transmitted time-domain symbols. Particularly, Col. 6, lines 58-64 state:

FIG. 5 is a diagram of an OFDM burst 500 according to one embodiment of the present invention. OFDM burst 500, as depicted . . . includes a v length cyclic prefix 502 and a supplemental cyclic prefix 504 having length L . **Together, v length cyclic prefix 502 and supplemental cyclic prefix 504 duplicate the last $v+L$ of N time domain symbols.** (Col 6, lines 58-64, *emphasis added*)

The frequency offset of Jones is then found to be:

$$f_{\text{offset}} = \frac{1}{2\pi M} \tan^{-1} \frac{\text{Im}\bar{d}(\delta^{\text{opt}})}{\text{Re}\bar{d}(\delta^{\text{opt}})}$$

Thus, as taught by Jones, the supplemental cyclic prefix used for acquiring burst and timing frequency offset, contains only a repetition of time domain symbols. ***These time domain symbols do not represent frequency position information for the burst, as claimed by the Applicants.***


Summary

In summary, the Applicants specifically claim the fact that their synchronization burst contains bits representing frequency position information for the burst. The Examiner states that this limitation can be found in Jones. However, analysis of Jones reveals that Jones only teaches a burst containing a cyclic prefix that can be used for acquiring timing and frequency offset information. Jones' cyclic prefix only contains duplicated symbols. Since Jones' duplicated symbols are not bits representing frequency position information for the burst, all claims are not made obvious by the combination of Fei, Jones, and Parish.

No amendment made was related to the statutory requirements of patentability unless expressly stated herein; and no amendment made was for the purpose of narrowing the scope of any claim, unless Applicant has argued herein that such amendment was made to distinguish over a particular reference or combination of references. As the Applicant has overcome all substantive rejections given by the Examiner the Applicant contends that this Amendment, with the above discussion, overcomes the Examiner's rejections to the pending claims. Therefore, the Applicant respectfully requests allowance of the application. If the Examiner is of the opinion that any issues regarding the status of the claims remain after this response, the Examiner is invited to contact the undersigned representative to expedite resolution of the matter. Finally, please charge any fees (including extension of time fees) or credit overpayment to Deposit Account No. 502117.

Respectfully Submitted,

Gorday, ET AL.

by: 

Kenneth A. Haas
Reg. No. 42,614
Phone: (847) 576-6937
FAX: (847) 576-3750